Idaho Currents

Idaho Water Supply: So Far, So Good

By Ron Abramovich, NRCS

The 2004 water year began October 1 with a slow start. Mother Nature started delivering abundant moisture to Idaho on Christmas Eve. Snow packs have been increasing since and are now 88-128 percent of average as of January 20.

"This is good news but, with half the winter still to come, the water supply outlook will not be fully known until Mother Nature plays her final card," says Ron Abramovich, water supply specialist with the U.S. Department of Agriculture, Natural Resources Conservation Service.

"With so many future unknown variables such as soil moisture, timing of the runoff, future winter and spring precipitation, it is too early to tell whether this year will break the three to four year southern Idaho drought until later in the spring," Abramovich adds.

Stream flow forecasts for most basins are in the 90-110 percent of average range for the April-September period. The exception is the Bear River at Stewart Dam, which is forecast at only 20 percent of average.

In most other basins, stream flow forecasts look encouraging for Idaho's numerous water users. With more than half the season still to come, snow pack conditions in the second half of winter could improve with additional storms, maintain current snow levels with normal precipitation, or deteriorate with below normal precipitation.

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Snow pack

Abundant moisture since Christmas Eve gave Idaho's snow packs the boost they needed and they have continued increasing into the first week of January. January 1 snow packs were the highest in the basins south of the Snake River at about 115 percent of average.

Elsewhere in the state, most basins range from 90-110 percent of average. A few isolated basins, Mores Creek,

The year's first powerful snow storm on Jan. 7 left more snow in the state than had fallen all of the previous year. Piles of the white stuff surrounded the state office of the Department of Water Resources. *(Photo by Linda Cawley)*

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Owyhee and Willow (eastern Idaho), are greater than 120 percent of average. The lowest snow packs are 85-90 percent of average in the Lemhi, Mann, Little Lost, Birch, and Idaho Panhandle basins.

Precipitation

The new water year started dry, much like water year 2003 ended. October precipitation ranged from 16 percent of average in the basins south of the Snake River to 40 percent in the Salmon basin. Only the Clearwater and Panhandle Region received near average precipitation in October.

November brought a little more precipitation and snow to start the annual accumulation of Idaho's high elevation snow pack, ranging from 70 percent of average in central Idaho to 125 percent in the Clearwater basin.

In December, the weather pattern changed with a few SNOTEL sites in southern Idaho and northern Nevada receiving 200 percent of average precipitation, while the Panhandle Region and Clearwater basin received only 75-85 percent. Precipitation for the water year ranges from 80 percent of average in the Little Lost and Birch basins to 108 percent in the Owyhee Basin south of the Snake River.

Idaho ski resorts relished the storm on Jan. 7 that left 8 inches of snow at Brundage Mountain Resort near McCall. *(Brundage Mountain photo used with permission.)*

Reservoirs

Reservoir storage remains low to record low across southern and eastern Idaho. The lakes and reservoirs in northern Idaho and northwest Montana are storing near average amounts except for Coeur d' Alene Lake, which is 39 percent of average.

Stream flow

Stream flow forecasts for most basins are in the 90-110 percent of average range for the April-September period. These forecast numbers are the volume under the 50 percent Chance of Exceeding, which means there is a 50 percent chance the volume will be greater or less then the given value.

The effects of the drought are still present and the need for additional precipitation for the remainder of the winter season is still percent to alleviate the long-term drought in northern and southern Idaho. In fact, several wet years may be needed to eliminate the drought in southern Idaho.

The accumulated years of drought has many experts suggesting that the more conservative, 70 percent chance of exceedance figures, be used to estimate 2004 stream flow. This would result in stream flow forecasts of 80-90 percent of average across most of the state.

Recreation

"An abundant delivery of moisture began across Idaho on Christmas Eve and didn't stop until the first week of January," says Abramovich. "This was a pleasant surprise for Idaho's winter recreational enthusiasts with some snow measuring sites nearly doubling in snow depth and snow water."

Snow measuring stations indicate that mid-elevation areas in the 6,000-foot zone in the west-central mountains received the most snowfall from the recent storms. Snow sites in the headwaters of the Boise Basin are nearly 100 inches deep, about the same as in the Clearwater Basin, which usually receives much more snow.

Cold temperatures allowed the snow to fall with a light density. The 30 inches of snow that fell above Idaho City only had 2.5 inches of water and was at 8 percent density. Some snow surveyors reported they dug tunnels through the snow to get to some snow sites in western Wyoming. Light snow caused more drifting and increased avalanche danger. The snow depth will settle with new snow or warmer temperatures.

Stream flow forecasts look encouraging for Idaho's whitewater rafting season, but with more than half the season still to come, snow pack conditions in the second half of winter could improve more with additional storms, maintain current levels with normal future precipitation, or deteriorate with below normal precipitation.

Stay tuned, as we still have five more innings to go!

(Editor's note: See related story on page 5.)

Case Studies Show Strong Results

Three new case studies conducted by the Energy Division demonstrate significant energy savings by utilizing building commissioning techniques.

Three public buildings in Idaho were commissioned as part of the Idaho program, two new buildings and one existing. Each of the buildings shows paybacks of less than nine years, a considerable rate of return for buildings designed to last for decades.

"All of the projects, the Nampa City Hall, Ada County Courthouse, and Boise State University Recreation Center, showed significant energy savings by utilizing thorough planning, testing, and optimization techniques," says Mike Purcell, energy specialist with the Energy Division.

"Facility staff members were also trained on equipment use, which will likely ensure buildings operate well for a while to come."

The projects demonstrate the importance of commissioning and the clear benefits. The better public buildings are constructed and operated, the lower their lifecycle costs, thus giving taxpayers the best return-on-investment possible for the best product.

"Commissioning should be a part of every major building project along with regular maintenance practices," Purcell adds.

New building commissioning focuses on verifying and documenting that the facility and all of its systems and assemblies are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements.

Existing building commissioning tries to optimize the current equipment through better operation and maintenance practices. Commissioning for existing buildings identifies causes and recommends solutions to typical problem areas, such as high-energy costs and poor comfort or indoor air quality.

"As budgets and schedules get tighter, it is becoming increasingly important to ensure building owners get high performing buildings ready to be used," says Purcell. "Poorly performing buildings have higher energy costs, increased labor costs due to sick employees, and lower productivity caused by uncomfortable or unsafe work spaces.

Saving energy = saving dollars

Before the commissioning process at Nampa City Hall, there were numerous complaints of hot or cold spots, wide temperature swings, higher than necessary lighting levels, and systems that didn't turn off even when no one was using the building. Commissioning helped address these issues and saved the city about $17,000 a year.

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Mike Purcell
Energy Specialist

By commissioning the Ada County Courthouse, several problems were avoided before the building was completed through a multi-discipline design review and correction process. These changes avoided more expensive corrections later and ensured that when the users moved in, the building was ready.

Numerous issues were discovered at the BSU Recreation Center during construction. The thorough testing that was part of commissioning helped correct these issues and established a reliable baseline.

"Without a good baseline, many new buildings never get problems diagnosed correctly before occupation or after," says Purcell.

To view or download case studies on these projects and more, go to the Energy Division's building commissioning website at **www.idwr.state.id.us/energy/cx**. More information on commissioning is available at the Northwest Energy Efficiency Alliance's website at **www.betterbricks.org**. The Alliance was the sponsor of this program.

Editor's note: Mike Purcell is no longer with the Energy Division. He left to pursue a bachelor's degree in mechanical engineering.

Conference Focuses on Efficient Food Processing

Dennis Conley, chairman of the Northwest Food Processors Association and vice president of Basic American Foods, spoke on behalf of the NWFPA during The Future of Food Processing conference. *(Photo by Linda Cawley)*

Some of the state's leading food processors and government officials want to develop a strategy to implement technologies and policies that could provide major new opportunities for remaining competitive in a global economy.

The two groups met in Boise in December for a one-day conference on The Future of Food Processing. The purpose of the conference was to provide an opportunity to exchange ideas.

"The food processing industry is critical to the continued prosperity of Idaho – particularly in our rural areas – and technology is the key to keeping that industry competitive," said Idaho Lt. Gov. James Risch, who welcomed attendees on behalf of the state of Idaho.

"Food processors are facing a time when energy prices and availability, waste management requirements and aging infrastructure pose serious challenges to our state," says Ken Eklund, principal energy specialist with the Energy Division.

The conference was sponsored by the Lt. Governor's office and the Northwest Food Processors Association with organization and co-sponsorship provided by the Energy Division's Industries of the Future program.

Additional sponsors included the U.S. Department of Energy's Industrial Technology program. The Oregon Office of Energy and the Washington State University Energy Program partnered with IOF to add a regional perspective and assist with the conference implementation.

School Gets Solar Panels That Will Generate Power, Educate Students

By Mickey Walker, Times-News correspondent

CASTLEFORD – A pilot project using solar panels at Castleford School is only the start of plans to demonstrate the use of alternative forms of energy.

While the panels will generate electricity to go on the Idaho Power Co. grid, the primary purpose of the project is to demonstrate solar power generation to students and others, according to backers of the effort.

"Basically, the educational component is the biggest part of this system because it teaches students about reusable energy sources, whether it's wind or solar," said John Rosencrantz, owner of Wind Power Unlimited.

Rosencrantz sized the system for the school and along with project coordinator Bill Chisholm ordered the apparatus that was installed in December. A grant from the Bonneville Environmental Foundation for a little over $12,000 paid for the solar panels and other equipment.

The solar panel system will have the capability of monitoring its own power production and relaying the information to computers in the school, Rosencrantz said. It will break down production on an hourly, daily, weekly and monthly basis.

A wind ananometer will be installed to measure the effect of the wind on the panels, and there will be two

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temperature sensors and a solar radiation sensor. Students will be able to monitor all the information provided by the sensors through their school computers.

"The long and short of it is students will have a huge amount of information on how the environment affects our everyday life through the solar cell array," Rosencrantz said.

"Basically, the educational component is the biggest part of this system because it teaches students about reusable energy sources, whether it's wind or solar."

John Rosencrantz
Wind Power Unlimited

Dec. 17 was the target date for data to begin flowing through the system after the installation of software and monitoring equipment.

The project started more than a year ago with Chisholm and a representative from Idaho Power performing an energy audit at the Castleford School. Chisholm said the school had taken several steps to reduce its energy use through conservation, but with limited resources it couldn't tackle any large projects.

A requirement of the Bonneville Environmental Foundation's grant is that a project to produce alternative energy can't be used for wasteful consumption.

"Castleford was ahead of the curve in terms of energy conservation, so they became our pilot project," Chisholm said.

"It's no secret that we run on a shoestring budget and we've been pinching energy pennies for some time," school district Superintendent Kelly Murphey said.

The educational applications of the project will initially involve the third and fifth grades and then be expanded to other grades, Murphey said. Curriculum will be science-based, with math and writing applications included.

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NRCS Updates SNOTEL Data

The Natural Resources Conservation Service (NRCS) installs, operates, and maintains an extensive, automated system to collect snow pack and related climatic data in the Western United States called SNOTEL (for SNOw and TELemetry).

The National Water and Climate Center provides real-time snow and climate data using automated remote sensing from SNOTEL sites. The center's web site pages provide displays on the various reports associated with SNOTEL sites by using the links on the left side of the page.

By using the center's web site, the public will find state and site specific data, maps and graphs showing snow water equivalent, snow depth, precipitation, temperature and other climate elements in hourly, daily, monthly and yearly increments. These products are used for forecasting and management of water supplies.

The Idaho SNOTEL Snow Water Equivalent Graph is updated daily. The graph provides the basin and snow water equivalent percent of average.

The web site is www.wcc.nrcs.usda.gov and the Idaho SNOTEL Snow Water Equivalent Graph is www.wcc.nrcs.usda.gov/cgibin/snowup-graph.pl?state=ID.

Energy Tax Deductions

Owners of homes in Idaho built prior to Jan. 1, 1976, can still receive a state tax deduction if they made energy conservation improvements in 2003.

You can claim a tax deduction from your taxable income for the total cost of insulation, thermal or storm windows and door, and caulking or weather stripping for your principal residence, according to the Idaho State Tax Commission.

Alternative energy devices installed in an Idaho residence, regardless of when it was built, are also eligible for an Idaho state income tax deduction.

Forms 39R and 39NR are available in your state tax booklet, or call the State Tax Commission at 1-800-972-7660 or 334-7660 in Boise.

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